

sized musculoelastic arteries and, to a lesser degree, veins. The ratio of male to female patients in fatal cases is 3:1, and most are younger than 2 years of age at the time of death.

Special tests are required to diagnose coronary artery aneurysms, which affect about 20% of patients. Two-dimensional echocardiography is sensitive in detecting left coronary artery aneurysms. Generally, both coronary arteries are aneurysmally dilated in the proximal area. Most of the coronary artery lesions regress in size within a year while the rest have persistent aneurysm or narrowed, tortuous arteries or at least minor permanent damage.

The treatment of Kawasaki disease is supportive care. Until recently administration of high doses of aspirin was the treatment of choice, but this is now undergoing further study. It seems likely that a lower dosage of aspirin will be recommended in the near future. Steroid therapy is contraindicated. In an unpublished study of 300 patients by Drs Kusakawa and Yanagawa of Japan, patients treated with steroid therapy had a significantly higher incidence of aneurysm formation than children treated only with aspirin. Patients with cardiac abnormalities are observed closely during and following their initial illness and should be seen periodically throughout childhood and adolescence for further cardiac or vascular complications of the illness.

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Lyme Disease

LYME DISEASE is caused by a spirochete that can be found in blood, skin lesion or cerebrospinal fluid specimens. It has also been isolated from the nymphal and adult forms of its vector, *Ixodes dammini*. In California and Oregon, *Ixodes pacificus* ticks have been implicated. Cases have been widely distributed over the United States, Europe and the Far East.

Lyme disease typically begins in the summer with a unique skin lesion, erythema chronicum migrans, which usually lasts about three weeks, beginning as a red macule or papule that expands to form a large ring with central clearing. Annular lesions usually range from 6 to 52 cm in diameter; they may be absent or number more than 20 and last from three days to eight weeks. The rash may be accompanied by fever, headache, stiff neck, myalgias, arthralgias, malaise, fatigue or moderate lymphadenopathy. Weeks or months later, aseptic meningitis, meningoencephalitis, cranial neuropathies especially of the facial nerve, myelitis, migratory musculoskeletal pain, monoarticular or oligoarticular arthritis, myocarditis or atrioventricular node block may develop in certain patients. Radiculoneuritis may occur that is indistinguishable from brachial plexus

neuritis. A Guillain-Barré-like syndrome, atypical in that it may show a cerebrospinal fluid pleocytosis in the range of 35 to 120 leukocytes, with 60% to 100% as mononuclear cells, has been described. Lymphocytic meningoradiculitis (Bannwarth's syndrome) has been associated serologically with Lyme disease. Serum cryoprecipitates, raised serum IgM levels and elevated erythrocyte sedimentation rates may occur.

Penicillin or tetracycline given for ten days can successfully treat the early phases of the disease when rash is present and can prevent, or at least ameliorate, the subsequent arthritic, neurologic or cardiac disorders.

Diagnosis can be confirmed by the finding of raised levels of IgG or IgM antibodies to the spirochete using indirect immunofluorescence, or by isolating the spirochete. These tests are presently of limited availability except through state departments of health, so local laboratory personnel should be alerted to the specific diagnostic concern when considering this disease.

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Pneumococcal Polysaccharide Immunization

IMMUNIZATION WITH pneumococcal polysaccharide vaccine is a safe and effective means of increasing a specific antibody and providing protection against overwhelming infection from *Streptococcus pneumoniae*. It is generally agreed, however, that immunization should be restricted to specific populations at high risk for infection.

Those patients who should be immunized include persons with increased susceptibility to infection but in whom a normal antibody response can develop following immunization. Specific diagnoses include sickle cell disease, splenectomy following trauma or for hematologic disorders, aging (that is, older than 55 years of age), complement disorders and nephrotic syndrome. Patients who might benefit from immunization but who have an impaired antibody response include those who have Hodgkin's disease with splenectomy, multiple myeloma and other malignant disorders. Many patients who are susceptible to overwhelming infection have severely impaired immunity and would not be expected to benefit from immunization. These include patients who have hypogammaglobulinemia and severe abnormalities of both T-cell and B-cell immunity. Patients with chronic lung disease who do not have an increased susceptibility to *S pneumoniae* infection, such as those who have asthma or cystic fibrosis, should not be immunized.

Immunization should be given to children 2 years